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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,699

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Takeshi Matsumura

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EXAMINER

WEATHERBY, ELLSWORTH

ART UNIT

PAPER NUMBER

3768

MAIL DATE

DELIVERY MODE

10/27/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,699	Applicant(s) MATSUMURA ET AL.	
	Examiner ELLSWORTH WEATHERBY	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/11/2010; 6/17/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 21-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Von Behren et al. (USPN 6,558,324) in view of Sarvazyan (USPN 5,678,565).

3. Von Behren et al. (hereinafter Von Behren) teaches an ultrasonic apparatus (Abstract; Figs. 1-6; claim 1), comprising: a tomographic image construction unit capable to construct grayscale tomographic images including a predetermined area of tissue of an object to be examined by repeatedly transmitting ultrasonic waves to the object at time intervals and receiving time-series reflected echo signals from the object including the predetermined area (col. 3, ll. 1-25; col. 5, ll. 1-10; col. 5, ll. 48-64; col. 7, ll. 51-65); an elasticity image construction unit capable to construct color elasticity images by measuring displacement of tissue of the object based on the time-series reflected echo signals (col. 3, ll. 1-25; col. 8, ll. 40-51; col. 10, ll. 14-45: Here, the Examiner stands that an outline image is formed between tissues of differing elasticity); an image composition unit capable for generating composite images of the color elasticity image and the grayscale tomographic image including the predetermined area where the images are overlapped on the same screen (col. 14, ll. 2-22); and a display unit capable

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for displaying a stiff area of the tissue of the object in relation to the predetermined area of the tissue of the object in the grayscale tomographic image whereby diagnosis of a condition of the object is enabled (col. 14, ll. 25-67). Von Behren also teaches that the image composition unit is capable to utilize luminance information of the tomographic image as three primary colors of light, and adds the information to hue information of the color at a set rate where a user can adjust the coloration (col. 3, ll. 23-63). Von Behren further teaches that each pixel may be rendered using the color, where the colors preferably range from blue to red, with either "extreme" color used to indicate maximum hardness (lowest strain value) and the other used to indicate maximum softness (highest strain value) (col. 15, ll. 29-36). Von Behren also teaches that the image composition unit includes a selecting unit for selecting a plurality of arbitrary images from among the color elasticity images and the gray scale tomographic images (col. 3, ll. 34-44).

4. Von Behren teaches all the limitations of the claimed invention except for expressly teaching that the display enables a comparison of spread of condition of a stiff area. Von Behren also does not expressly teach that the elasticity image construction unit includes a pressure measuring unit. Von Behren also does not expressly teach that the outline image construction unit is capable to outline areas of tissues of the object on the basis of a plurality of thresholds.

5. In a related field of endeavor, Sarvazyan et al. (hereinafter Sarvazyan) teaches an ultrasonic elasticity imaging method and device (Abstract; Figs. 1-13). Sarvazyan goes on, teaching a dynamic elastic imaging mode configured for determining the

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spread of stresses in time for use in diagnosing tissues (col. 4, ll. 56-64; col. 7, ll. 5-29).

Here, Sarvazyan teaches that a pressure sensor measures information on pressure applied to the object (col. 6, ll. 45-64; col. 11, ll. 53-67). Sarvazyan also teaches identifying tissue on a basis of a plurality of thresholds (col. 8, ll. 13-55; col. 9, l. 53- col. 10, l. 6). Sarvazyan goes on, teaching that the pressure sensor array is capable for measuring information of pressure applied to the object in accordance with manual displacement of the tissue of the object (col. 10, ll. 7-29).

6. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the elastic imaging and compound display of Von Behren with the pressure sensing and dynamic elastography of Sarvazyan. The motivation to modify Von Behren in view of Sarvazyan would have been to clearly identify regions of different elasticity in the tissue elasticity evaluation.

Response to Arguments

7. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. .

8. Applicant alleges that Von Behren does not provide a teaching of an image composition unit for generating composite images of the color elasticity image and the gray scale tomographic image including the predetermined area, and a display unit for displaying a stiff area of the tissue of the object in the color elasticity image in relation to the predetermined area of the tissue of the object in the gray scale tomographic image

so as to enable comparison of a spread of condition of the stiff area of the tissue in the color elasticity image with respect to the predetermined area of the tissue.

9. In response to applicant's argument that Von Behren does not teach "image composition unit for..." or "a display unit for...", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

10. Nevertheless, the Examiner concedes, as noted above, that Von Behren does not expressly teach that the display enables a comparison of a spread of condition of the stiff area of the tissue. Here, Sarvazyan has been set forth for the express teaching of dynamic elastography capable to enable a comparison of the condition of the stiff area of the tissue using a pressure sensing array, as outlined in the above rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELLSWORTH WEATHERBY whose telephone number is (571) 272-2248. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/EW/

/Long V Le/
Supervisory Patent Examiner, Art Unit 3768

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